

REMARKS

Applicant thanks the Examiner for the very thorough consideration given to the present application.

Claims 1-15, 29-47, 50, 51, and 53 are now pending in the application. Claim 37 is amended. Claims 54-69 are added. Claims 16-28, 48, 49, and 52 have been cancelled without prejudice to the subject matter contained therein. Applicant expressly reserves the right to refile these cancelled claims in a subsequent application.

The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTIONS OF CLAIMS UNDER 35 U.S.C. § 103

Claims 1-2, 7-9, 30, 50, and 51

Claims 1-2, 7-9, 29, 30, 50, and 51 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota et al. (U.S. 5,247,733) in view of Bailey (U.S. 5,683,247). These rejections are respectfully traversed.

Independent Claims 1, 7, and 29 are directed to machines adapted to assemble a dental product (Claims 1 and 7) or a dental device (Claim 29). Kubota does not render Claims 1, 7, and 29 obvious in view of Bailey because the product assembled by the Kubota machine is not a dental product or dental device. In the BACKGROUND OF THE INVENTION of the Kubota patent, Kubota recognizes the problem that the assembly of some products cannot be automated before a quantity of product sales is expected or realized. Kubota then discloses a component assembling apparatus which allegedly addresses this problem. Accordingly, Kubota contemplates the use of the Kubota machine in assembling only those products which are already susceptible to automation but that have not yet been automated for cost reasons. Kubota does not suggest using the Kubota machine to assemble products, such as dental products, which had not yet been recognized as being susceptible to automation. As a result, it would not have been obvious to a person of ordinary skill in the art to modify the Kubota machine to automate the assembly for a dental product in view of Bailey,

especially since Bailey makes no reference whatsoever about automating the assembly of the Bailey dental angle.

MPEP 2141 admonishes that in making a *prima facie* case of obviousness, (A) the claimed invention must be considered as a whole; (B) the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (C) the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and (D) reasonable expectation of success is the standard with which obviousness is determined.

In the present case, the obviousness rejections are based on Kubota disclosing a machine for automated assembly of a motor unit, and Bailey's disclosure of a dental product. But these rejections disregard the question as to whether either of these patents states any desirability for combining them. Accordingly, the nature of the obviousness rejections appears to be based on hindsight. For example, the Office Action states that it would have been obvious to one having ordinary skill in the art at the time the invention was made to assemble Bailey's dental angle using the Kubota machine for the process of making the dental product in larger quantities while reducing the cost of manufacturing. But Bailey explicitly states that its single-piece body construction already allows for the inexpensive manufacture and assembly of Bailey's dental prophylaxis angle (DPA) 1 (see for example, Bailey, column 6, lines 4-15). Presuming this to be the case, there would not be any need, thus no suggestion or incentive, to provide for the automated assembly of the Bailey DPA 1 in order to reduce the costs of manufacture.

Additionally, the Office Action also does not provide any of the details (e.g., order of steps, modifications, adaptation, resolution of compatibility issues, control logic, etc.) regarding the manner in which the Kubota machine would assemble the various components of the Bailey DPA 1. This information is also not available in either Kubota or Bailey. Kubota never mentions dental products, and Bailey does not mention automated assembly. It also cannot be ascertained from the cited references whether Kubota's various hands 24a and tools 24b (see, for example, Kubota table 1 in columns 5-6) are compatible with and

capable of holding and manipulating the components of Bailey's DPA 1 in the manner that would be required to automatically assemble the Bailey DPA 1. For example, different hands 24a and tools 24b may be required for holding and manipulating the components comprising Bailey's DPA 1 than that required for holding and manipulating the components comprising the Kubota motor unit 18 (e.g., base 13, threaded screws 14, gears 16a, 16b, 16c). Reprogramming of the arm robots 21a and 21b would also be needed, for example, to allow the arm robots 21a and 21b to force fit the Bailey drive assemble 11 and cap 60 into the angle body 3 and head 7, respectively, with sufficient force to ensure that the respective annular barbs 37 and 63 displace enough material to prevent removal of the drive assembly 11 and cap 60. The complexities associated with the substantial modifications required to allow the Kubota machine, if that is even possible, to assemble the Bailey DPA 1 militate strongly against any finding of obviousness.

To support its obviousness rejections, the Office action states that Kubota discloses that an array of products can be assembled by the Kubota machine. Even so, the mere mention or passing reference that an array of products can be assembled by the Kubota machine does not then render obvious the automated assembly of each and every imaginable product. If this were the case and taking this argument to its extreme, then no patent directed to a novel automated assembly process for a particular product (e.g., automobile, computer, etc.) could ever issue because such a novel automated assembly process would be rendered obvious by Kubota in combination with any other patent that generally discloses an automobile, personal computer, or other related product. Simply because Kubota makes a passing reference that a wide range of products can be assembled with the Kubota machine does not render obvious a novel automated assembly for a dental product.

For at least the above reasons, Applicant respectfully traverses the obviousness rejections of claims 1-2, 7-9, 29, 30, 50, and 51.

In addition, Claim 7 requires a feeder and a transfer mechanism for the body of the dental product, and a feeder and a transfer mechanism for the tool of the dental product. Claim 29 requires "a body feeder for supplying the body to a

body isolator, the body isolator isolating a single body from the body feeder, and a body pick-and-place unit for moving the isolated body from the body isolator to one of the fixtures”. As discussed above, Kubota does not relate to assembly of dental products, and, accordingly, does not teach or suggest mechanisms for supplying, transferring, isolating, or moving the components of a dental product. Furthermore, Kubota relies on feeding devices 29 in which the components, such as gears, washers and screws, are supported on a tape. See, for example, Kubota, column 5, lines 38-52. With Kubota’s component feeding devices 29, however, the individual parts must be placed on the tapes and in the proper sequence prior to using the Kubota machine, thereby increasing the number of steps and time required to assemble a product. Because neither Kubota nor Bailey disclose, teach or suggest mechanisms for supplying, transferring, isolating, or moving the components of a dental product, Applicant respectfully submits that the rejection of Claims 7 and 29 should be withdrawn.

Claims 2, 8-9, 30, 50, and 51 depend from Claim 1, 7, or 29 and, accordingly, are distinguishable over the cited patents for at least the reasons stated above in connection with Claim 1, 7, or 29. Accordingly, Applicant respectfully requests that the rejection of Claims 2, 8-9, 30, 50, and 51 be withdrawn. In addition, the dependent claims are further patentably distinguishable over the cited patents because these patents do not disclose, teach or suggest the additional features required by the dependent claims.

Claims 3-6 and 11-14

Claims 3-6 and 11-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota et al. in view of Bailey as applied to Claims 1 and 7 and further in view of Nakagawa et al. (U.S. 6,460,312) and Kitagawa (U.S. 5,622,025). These rejections are respectfully traversed.

Claims 3-6 and 11-14 cannot be rendered obvious over Kubota in view of Bailey and Nakagawa and Kitagawa because, in addition to the reasons stated above in connection with Claims 1 and 7, neither Nakagawa nor Kitagawa discloses a bagging unit, a batch-counting unit, a batch conveyor system, or a carton-sealing unit used in the manufacturing of a dental product and associated

with a machine automating the assembly of a dental product. The mere disclosure of a bagging unit, a batch-counting unit, a batch conveyor system, or a carton-sealing unit in Nakagawa or Kitagawa does not provide any motivation or suggestion to incorporate the bagging unit, the batch-counting unit, the batch conveyor system, or the carton-sealing unit into a machine for automating the assembly of a dental product when these devices are not used in manufacturing of a dental product. The rejection appears to have disregarded the requirement that the claimed invention and the references must be considered “as a whole” and that the desirability of combining these references should be stated in the references themselves, and not in Applicant’s disclosure. Accordingly, Applicant respectfully requests that the rejections of 3-6 and 11-14 be withdrawn.

Claim 10

Claim 10 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota in view of Bailey as applied to Claim 9, and further in view of Fleming (U.S. 4,971,189). This rejection is respectfully traversed.

Claim 10 cannot be rendered obvious over Kubota in view of Bailey and Fleming because (in addition to the reasons stated above in connection with Claim 7 from which Claim 10 depends), Fleming does not suggest or provide a motivation to incorporate the product diverter of Fleming into a machine automating the assembly of a dental product. The mere disclosure of a product diverter in Fleming does not provide any desirability to combine the references to achieve the claimed invention of Claim 10. Neither the Office Action nor the cited patents provide any teachings as to how the Fleming diverter could be integrated into any other machine, like the Kubota machine. Applicant respectfully requests that the rejection of Claim 10 be withdrawn.

Claim 15

Claim 15 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota in view of Bailey, Fleming, Nakagawa and Kitagawa. This rejection is respectfully traversed.

Claim 15 cannot be rendered obvious over Kubota in view of Bailey, Fleming, Nakagawa, and Kitagawa. In addition to the reasons stated above in connection with Claim 7, none of Fleming, Nakagawa, and Kitagawa provides a motivation to incorporate the product diverter of Fleming, the packaging apparatus of Nakagawa or Kitagawa into a machine automating the assembly of a dental product where none of Nakagawa's and Kitagawa's packaging apparatus is used in packaging a dental product. The mere disclosure of a product diverter in Fleming and the packaging apparatus in Nakagawa and Kitagawa does not provide any desirability to combine the patents to achieve the claimed invention of Claim 15. In addition, neither the Office Action nor the cited patents provide any teachings as to how the cited patents could be integrated into another machine, like the Kubota machine. Accordingly, Applicant respectfully requests that the rejection of Claim 15 be withdrawn.

Claims 31-47

Claims 31-47 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota in view of Gamberg et al. (U.S. 4,184,840).

At the outset, Applicant notes that neither Kubota nor Gamberg discloses a dental product. Accordingly, Applicant respectfully submits that even if Kubota and Gamberg were properly combinable, any logical combination would result in subject matter different from that of claims 31-47.

Claims 31 and 37 are directed to systems for making dental prophylaxis angles. These claims require a table for carrying a plurality of mounting posts through a plurality of stations at which different assembly steps are performed. These claims also require a body station which takes an oriented body and places it on the mounting post at the body station, a first gear member station that takes and places an oriented first gear member in the body on the mounting post at the first gear member station, and a second gear member station that takes and places an oriented second gear member in the body on the mounting post at the second gear member station.

In contrast, Kubota uses only two arm robots 21a and 21b to pick and place different components of a product such that numerous assembling

operations are performed at one single working station. For example, first arm robot 21a is responsible for picking up a base, a motor, a first gear, and a third gear for assembling. Kubota's second arm robot 21b is responsible for picking up a second gear and applying grease to the product. The motor and the base are assembled and grease is applied in one single work station ST3 and the first gear, the second gear and the third gear are assembled and the height of the screws of the motor are inspected in one single work station ST7. While Gamberg discloses a rotary support table, Gamberg does not disclose that different assembling operations are performed at different stations. Having numerous stages or operations of the assembly process occur at a single station as in Kubota significantly slows down the assembly process as operations must be put on hold while waiting for previous operations to be completed at that work station. Neither Kubota nor Gamberg discloses a plurality of stations at which different steps or operations of the assembly process are performed. For at least these reasons, Applicant submits that Claims 31 and 37 are not obvious and respectfully requests that the rejection of Claims 31 and 37 be withdrawn.

Claims 32-36 and 38-43 each depend from Claims 31 and 37, respectively, and are distinguishable over the cited patents for at least the reasons stated above in connection with Claim 31 and 37. Accordingly, Applicant requests that the rejections of these claims be withdrawn. In addition, dependent claims 32-36 and 38-43 are further patentably distinguishable over the cited patents because these patents do not disclose, teach or suggest the additional features required by the dependent claims, such as:

“a closing station for closing a hinged closure on the body to enclose the first and second gear members in the body on the mounting post at the closing station” (as recited in claims 32 and 38); or

“a lubrication station for injecting lubricant into the body adjacent to the first gear member, and a first gear member seating station for seating the first gear member in a bearing in the body on the mounting post at the first gear member seating station” (as recited in claims 33 and 39); or

“mounting posts are adapted for engaging the interior of the bodies without regard to the external configuration of the bodies” (as recited in claims 34 and 41); or

“mounting posts are adapted for engaging the interior of the bodies without any contact with the exterior of the bodies” (as recited in claims 35 and 42); or

“each mounting post has a passageway therein positioned to align with a first drive shaft passage in the body, when the body is mounted on the mounting post, and a pin translatable in the passageway to selectively block the seating of a drive shaft in the first drive shaft passage in the body” (as recited in claims 36 and 43); or

“the tool station includes support for engaging the body as the tool is applied to the second gear member” (as recited in claim 40).

Regarding claims 32 and 38, the Office Action takes Official Notice that the use of closing stations is well known in the art of assembly of products with hinged elements. Applicant, however, respectfully traverses the Official Notice taken. MPEP §2144.03. Because Applicant has highlighted the features of the claimed inventions of Claims 31 and 37 that are distinguishable over Kubota and Gamberg, Applicant asserts that it would not be obvious for a person of ordinary skill in the art to include a closing station in combination with either of the systems for making dental prophylaxis angles as recited claims 31 or 37, considering the unique and nonobvious features of these systems as claimed in either Claim 31 or Claim 37. In addition, none of Kubota, Gamberg, and Ilseman discloses a dental prophylaxis angle. Indeed, Ilseman discloses methods related to compact discs and their cases. Further, Bailey (the only patent relied upon by the Office Action for a dental prophylaxis angle) expressly teaches away from having a hinged closure on the DPA's body, and, accordingly, teaches away from the use of a closing station. See, for example, Bailey, column 5, line 67 through column 6, line 3: “The fact that the body is molded or cast as a single piece

reduces the number of joints in the angle and thus facilitates the reduction in the possibility of foreign matter entering the angle.” Accordingly, Bailey teaches away from and does not render obvious a system that includes a closing station for closing a hinged closure on the body of a dental prophylaxis angle (as recited in Claim 32 or Claim 38). See MPEP § 2145 (“It is improper to combine references where the references teach away from their combination.”)

Independent Claim 44 requires a plurality of mounting posts to move in series through a plurality of stations at which a different assembly step is performed. Claim 44 also requires that the assembly step at each station be performed on that dental prophylaxis angle at its respective mounting post substantially simultaneously. This is not shown in the cited patents, and in particular Kubota, which uses two arms with replaceable tools, and thus does not employ substantially simultaneous action at a plurality of stations. In Kubota, the steps are performed by only two arm robots 21a and 21b, with the index table being rotated back and forth one hundred eighty degrees (180°) clockwise and counterclockwise. Kubota does not teach a plurality of mounting posts that move in series through a plurality of stations at which a different assembly step is performed. As a result, the Kubota machine cannot accomplish the claimed features of Claim 44 regarding each station performing an assembly step substantially simultaneously. With Kubota, numerous operations of the assembly process occur at a single station, which significantly slows down the assembly process because operations must be put on hold while waiting wait for other operations to be completed at that work station. In addition, neither Bailey nor Gamberg, alone or in combination, provides a motivation to modify the Kubota machine to achieve the claimed invention of Claim 44. Accordingly, Applicant submits that Claim 44 is not obvious and respectfully requests that the rejection of Claim 44 be withdrawn.

Claims 45-47 depend from Claim 44 and, accordingly, are distinguishable over the cited patents for at least the reasons given above in connection with Claim 44. Accordingly, Applicant respectfully requests the rejection of Claims 45-47 be withdrawn. In addition, dependent claims 45-47 are further patentably distinguishable over the cited patents because these patents do not disclose,

teach or suggest the additional features required by the dependent claims, such as:

“each mounting post has substantially the configuration of a Doriot nose for engaging the interior of the bodies without regard to their external configuration” (as recited in claim 45); or

“the mounting posts are adapted for engaging the interior of the bodies without any contact with the exterior of the bodies” (as recited in claim 46); or

“each mounting post has a passageway therein positioned to align with a first drive shaft passage in the body, when the body is mounted on the mounting post, and a pin translatable in the passageway to selectively block the seating of a drive shaft in the first drive shaft passage in the body” (as recited in claim 47).

In regard to claim 45 (and claims 46 and 47 depending therefrom), Applicant respectfully submits that the art as a whole, alone or in combination, neither anticipates nor renders obvious the claimed invention of Claim 45. The cited patents do not disclose, teach or suggest mounting posts having substantially the configuration of a Doriot nose for engaging the interior of the bodies without regard to their external configuration. For example, Gamberg discloses pointed dowels 32 for supporting a porcelain dental bridgework 100 above the top surface 24 of the rotatable support structure 20. Nowhere, however, does Gamberg teach or suggest a mounting post having substantially the configuration of a Doriot nose. Plus, the pointed dowels 32 are configured to only loosely support the porcelain dental bridgework 100 while it is being heated in a furnace or autoclave. The pointed dowels 32, however, would not be able to securely support the body of a dental product while the components are being assembled. For example, various embodiments of the present invention include a mounting post having an external portion correspondingly shaped with the interior portion of a dental product body (e.g., prophy angle body, etc.) such that the body can be snugly positioned on the mounting post, thereby securely supporting the body as the dental product's components are being assembled.

Given that neither Kubota nor Gamberg discloses a Doriot nose, there is no teaching or suggestion for modifying the Gamberg's pointed dowels 32 to have an external configuration that corresponds with that of the interior portion of the body of a dental product.

The Office Action takes Official Notice that the use of "key and slot" mechanism is well known in the art of mounting objects for the purpose of securing or locking elements onto a surface. Applicant, however, respectfully traverses the Official Notice taken. MPEP §2144.03. First, Claim 47 requires each mounting post to have a passageway therein positioned to align with a first drive shaft passage in the body, when the body is mounted on the mounting post, and a pin translatable in the passageway to selectively block the seating of a drive shaft in the first drive shaft passage in the body. Applicant respectfully submits that the Official Notice appears to be directed to different mechanism than the features claimed in Claim 47. More specifically, various embodiments of Applicant's invention include a "key and slot" as described, for example, in Applicant's specification at paragraph [0068].

A key 80 extends perpendicularly from the mounting post, this key 80 serves to maintain proper alignment of the angle on the post 78 by engaging the Doriot slot in the body of the angle to prevent the angle from rotating. The key 80 is preferably formed from a pin press fit into a hole in the side of the mounting post.

This key 80 and Doriot slot, however, are different than features regarding a mounting post having a passageway and a pin translatable within the passageway as claimed in Claim 47. For example, an exemplary embodiment is described in Applicant's specification at paragraph [0070].

The mounting post 78 includes a lengthwise through hole 84. A pin 85 is slideable in the hole 84 between two positions, "up" and "down", which are defined by two grooves 86 in the pin 85 and a spring-loaded ball plunger 87 mounted at a right angle and with access to the lengthwise hole 84. The ball of the spring-loaded ball plunger 87 engages the grooves 86 in the pin 85 in both the "up" and "down" positions to limit free movement of the pin 85 and prevent the pin 85 from falling out of the mounting post 78. This pin 85 is used to facilitate the lubrication of the drive shaft as discussed in detail below.

For these reasons, Applicant submits that even with the Official Notice taken, Claim 47 is still not rendered obvious by the cited patents and the Official Notice. Further, neither Kubota nor Gamberg discloses, teaches, or suggests a dental prophylaxis angle yet alone a system for making dental prophylaxis angles having each and every feature required by claim 47.

Claim 53

Claim 53 depends from Claim 29, and, accordingly, is distinguishable over the cited references, individually or in combination, for at least the reasons stated above in connection with Claim 29. Therefore, Applicant respectfully requests allowance of Claim 53.

NEW CLAIMS 54-69

Claims 54-69 are supported by the application as originally filed. Accordingly, no new matter is introduced by the addition of Claims 54-69.

In addition, Claims 54-69 each depend from an independent claim shown above to be allowable. Accordingly, Applicant respectfully submits that Claims 54-69 are each in condition for allowance for at least the reasons given above in connection with the independent claim from which they depend.

In addition, Claims 54-69 are further patentably distinguishable over the cited references in that the cited references do not disclose, teach or suggest the additional features required by these claims, such as:

“at least one vibratory feeder bowl that automatically orients bodies from bodies loaded therein; at least one vibratory feeder bowl that automatically orients first gears from first gears loaded therein; at least one vibratory feeder bowl that automatically orients second gears from second gears loaded therein; and at least one vibratory feeder bowl that automatically orients tools from tools loaded therein” (as recited in Claim 54); or

“each said assembly station is dedicated to performing a different one of the operations in the assembly of the dental product, the assembly operation at each station being performed

substantially simultaneously with the performance of the assembly operations at the other stations” (as recited in Claim 55); or

“the body feeder includes at least one vibratory feeder bowl that automatically orients bodies from bodies loaded therein; the first gear feeder includes at least one vibratory feeder bowl that automatically orients first gears from first gears loaded therein; the second gear feeder includes at least one vibratory feeder bowl that automatically orients second gears from second gears loaded therein; and the tool feeder includes at least one vibratory feeder bowl that automatically orients tools from tools loaded therein” (as recited in Claim 56); or

“a plurality of assembly stations generally surrounding the moveable table, each said station being dedicated to performing a different one of the operations in the assembly of the dental product, the assembly operation at each station being performed substantially simultaneously with the performance of the assembly operations at the other stations” (as recited in Claim 57); or.

“at least one vibratory feeder bowl that automatically orients bodies from bodies loaded therein; at least one vibratory feeder bowl that automatically orients gears from gears loaded therein; and at least one vibratory feeder bowl that automatically orients prophy cups from prophy cups loaded therein” (as recited in Claim 58); or

“a plurality of assembly stations generally surrounding the assembly table, each said station being dedicated to performing a different one of the operations in the assembly of the body, the two gears, and the prophy cup into an assembled dental prophylaxis angle, the assembly operation at each station being performed substantially simultaneously with the performance of the assembly operations at the other stations” (as recited in Claim 59); or

“the body feeder includes at least one vibratory feeder bowl that automatically orients bodies from bodies loaded therein; the

first gear feeder includes at least one vibratory feeder bowl that automatically orients first gears from first gears loaded therein; and the second gear feeder includes at least one vibratory feeder bowl that automatically orients second gears from second gears loaded therein” (as recited in Claim 60); or

“each said station is dedicated to performing a different one of the operations in the assembly of the dental device, the assembly operation at each station being performed substantially simultaneously with the performance of the assembly operations at the other stations” (as recited in Claim 61); or

“the tool feeder includes at least one vibratory feeder bowl that automatically orients tools from tools loaded therein” (as recited in Claim 62); or

“each said station is dedicated to performing a different one of the operations in the assembly of the dental prophylaxis angle, the assembly operation at each station being performed substantially simultaneously with the performance of the assembly operations at the other stations” (as recited in Claim 63); or

“each said mounting post includes an external portion complimentary in shape to an interior portion of the body of the dental prophylaxis angle for securely engaging and supporting the body as the components are being assembled into the dental prophylaxis angle” (as recited in Claim 64); or

“the closing station includes a closer mechanism for engaging and moving a closure member of the body to a closed position in which the hinged closure on the body is closed, and an actuator linkage coupled to the closer mechanism, the actuator linkage being moveable between open and closed positions such that when the actuator linkage is activated it moves the closer mechanism to engage and move the closure member to the closed position” (as recited in Claim 65); or

“the body feeder includes at least one vibratory feeder bowl that automatically orients bodies from bodies loaded therein; the first gear member feeder includes at least one vibratory feeder bowl that automatically orients first gear members from first gear members loaded therein; the second gear member feeder includes at least one vibratory feeder bowl that automatically orients second gear members from second gear members loaded therein; and the tool feeder includes at least one vibratory feeder bowl that automatically orients tools from tools loaded therein” (as recited in Claim 66); or

“each said station is dedicated to performing a different one of the operations in the assembly of the dental prophylaxis angle, the assembly operation at each station being performed substantially simultaneously with the performance of the assembly operations at the other stations” (as recited in Claim 67); or

“each said mounting post includes an external portion complimentary in shape to an interior portion of the body of the dental prophylaxis angle for securely engaging and supporting the body as the components are being assembled into the dental prophylaxis angle” (as recited in Claim 68); or

“each said station is dedicated to performing a different one of the operations in the assembly of the dental prophylaxis angle, the assembly operation at each station being performed substantially simultaneously with the performance of the assembly operations at the other stations” (as recited in Claim 69).

With further regard to Claims 54, 56, 58, 60, 62, and 66, none of the cited patents disclose, teach, or suggest a vibratory feeder bowl that automatically orients components from components loaded into the bowl. For example, Kubota relies on feeding devices 29 in which the components, such as gears, washers and screws, are supported on a tape. See, for example, Kubota, column 5, lines 38-52. With Kubota’s component feeding devices 29, however, the individual

parts must be placed on the tapes and in the proper sequence before using the Kubota machine, thereby increasing the number of steps and time required to assemble a product with the Kubota machine. For at least these additional reasons, Applicant respectfully submits that Claims 54, 56, 58, 60, 62, and 66 are each in condition for allowance.

Regarding Claims 5, 57, 59, 61, 63, 67, and 69, none of the cited patents disclose, teach, or suggest a plurality of stations each dedicated to performing a different one of the assembly operations such that the assembly operation at each station is performed substantially simultaneously with the performance of the assembly operations at the other stations. For example, Kubota uses two arms with replaceable tools, and thus does not employ substantially simultaneous action at a plurality of stations. In Kubota, the steps are performed by only two arm robots 21a and 21b, with the index table being rotated back and forth one hundred eighty degrees (180°) clockwise and counterclockwise. With Kubota, numerous operations of the assembly process occur at a single station, which significantly slows down the assembly process because operations must be put on hold while waiting for other operations to be completed at that work station. For at least these additional reasons, Applicant respectfully submits that Claims 5, 57, 59, 61, 63, 67, and 69 are each in condition for allowance.

In regard to Claims 64 and 68, none of the cited patents disclose, teach, or suggest a mounting post having an external portion complimentary in shape to an interior portion of the body of a dental prophylaxis angle. For example, Gamberg discloses pointed dowels 32 for supporting a porcelain dental bridgework 100. Nowhere, however, does Gamberg teach or suggest a mounting post having substantially the configuration of an interior portion of a dental prophylaxis angle. Plus, the pointed dowels 32 are configured to only loosely support the porcelain dental bridgework 100 while it is being heated in a furnace or autoclave. The pointed dowels 32, however, would not be able to securely engage and support the body of a dental prophylaxis angle as the components are being assembled into the dental prophylaxis angle. For at least these additional reasons, Applicant respectfully submits that Claims 64 and 68 are each in condition for allowance.

Finally, none of the cited patents disclose, teach, or suggest a closing station as recited in Claim 65. In fact, Bailey (the only patent relied upon by the Office Action for a dental prophylaxis angle) expressly teaches away from having a hinged closure on the DPA's body, and, accordingly, teaches away from the use of a closing station. See, for example, Bailey, column 5, line 67 through column 6, line 3: "The fact that the body is molded or cast as a single piece reduces the number of joints in the angle and thus facilitates the reduction in the possibility of foreign matter entering the angle." Accordingly, Bailey teaches away from and does not render obvious a system that includes a closing station for closing a hinged closure on the body of a dental prophylaxis angle (as recited in Claim 65). See MPEP § 2145 ("It is improper to combine references where the references teach away from their combination."). For at least these additional reasons, Applicant respectfully submits that Claim 65 is in condition for allowance.

CONCLUSION

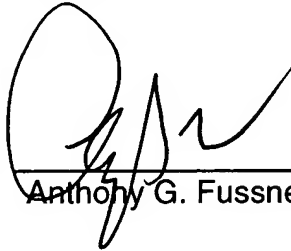
It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Prompt and favorable consideration of this response is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 726-7502.

Applicant believes that the appropriate fees have been included with this filing. If, however, Applicant owe any additional fee(s), the Commissioner is hereby authorized to charge the fee(s) to Deposit Account No. **08-0750**. In addition, if there is ever any other fee deficiency or overpayment under 37 C.F.R. §1.16 or 1.17 in connection with this patent application, the Commissioner is

hereby authorized to charge such deficiency or overpayment to Deposit Account
No. **08-0750**.

Respectfully submitted,

By:

A handwritten signature in black ink, appearing to be 'A. G. Fussner', written over a horizontal line.

Anthony G. Fussner, 47,582

Dated: June 1, 2005

HARNES, DICKEY & PIERCE, P.L.C.
7700 Bonhomme, Suite 400
St. Louis, Missouri 63105
314-726-7500